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ABSTRACT

After a brief explanation of the economic and social background of Brazil, its educational system is described and the prospects for higher education there are explored. Like most nations, Brazil's higher education system is unique and adapted to its own needs. Its system bears similarities to both European and American traditions. In the near future, expansion of higher education is presumed to be substantial, and there is concern for providing equal educational opportunity. Increased democratization is expected, and the opening of opportunity is assumed to provoke debate on the structure of Brazilian society, institutional priorities, and governance. However, the university is anticipated to mirror the social strata of Brazil for a long time to come. A brief bibliography is included. (MSE)

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ROAD TO THE FUTURE

General Aspects of Brazilian Higher Education and a Brief Comparison with Other Educational Modes

by

José Veiga Simão*

YALE HIGHER EDUCATION RESEARCH GROUP
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I. Introduction

Brazil is the largest and wealthiest country of the Portuguese-speaking world with more than 100 million people and a population growth of about 2.9% per year. (The birth and death rates are about 3.8% and 1.1%, respectively.) Its population has one of the highest ratios of young people in the world, about one half being under 20 years of age.

Brazil is also the fifth largest country in the world with a total and continuous area of 3,286,470 square miles, equivalent to almost half of South America. Its political Constitution defines Brazil as a Federative Republic comprised of 21 states, one federal district and four territories, all united under one representative form of government which rules the Union.

Major Regions

For social and economic studies the country is normally divided into five regions: (1) The North (42.1% of the total area) comprises the states of Acra, Amazonas, Pará, and also the federal territories of Rondônia, Roralma and Amapá. A zone of untapped wealth, the northern region contains only 4% of the population; (2) the Northeast (18.2% of the total area) includes the territory of Fernando Noronha, Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco, Piaui, Rio Grande de Norte and Sergipe. This developing area contains about 30%

of the population; (3) the Center West (22.1% of the total area) incorporates the large inland states of Goiás, Mato Grosso, and the Brazília Federal District. It is still sparsely populated and is covered by savannahs and tropical grassland. It contains only 5.4% of the country's people. The recent foundation of Brazília, as the capital of the country, has given this region an impetus to agricultural and industrial development; (4) the Southeast (10.9% of the total area) contains the most developed and industrialized states. Rich in minerals, it is also the most advanced agriculturally. This region accommodates 43% of the population in its states of São Paulo, Minas Gerais, Rio de Janeiro and Espirito Santo; (5) the South (6.8% of the total area) comprising the states of Paraná, Santa Catarina and Rio Grande do Sul, has reached an advanced level of agricultural and industrial development and thus attracts many North European and Italian immigrants. The population living here represents about 17.6% of the total.

Demography

The distribution of the Brazilian population varies greatly from one region to another. In fact, the demographic density changes from three people per square mile in the Amazon area to 115 in the southeastern region.

Brazil is an amalgam of races and cultures. Although the majority of the population is Catholic (93%), freedom of religion exists, with the Protestant population around 4%. The population

is 62.5% white, 25% colored, 12% black and 6% yellow. Since 1884 the major waves of immigration have been of Portuguese, Italian, Spanish, Japanese and German origins.

Economy

More than 50% of the nation's 30 million people are involved in agriculture, mining and forestry, with approximately 20% involved in industry and civil construction, 8% in commerce, 4% in transportation, and nearly 20% in services and social activities, of which 4% are in public administration.

Urbanization

One of the most important features of Brazil's recent history has been its rapid urbanization. Large concentrations of people have been attracted to the big cities. In fact, a comparison of the census figures of 1940 and 1960 indicates that while the rural population increased by 37.5%, the urban population increased 146% during this period. The urbanization phenomenon, associated with industrialization and the beginning of mechanization in agriculture, has contributed decisively to the rate of economic growth: from 5.1% in the period 1941-47 to 8.3% in 1957-69. After a decrease to 3.7% in 1962-67, the rate rose to 10% a year until 1974. With the energy crisis, it is now running between 5 and 8%.

Economic Policy

Brazil's economic policy is an attempt to expand simultaneously

the public and private sectors while giving incentives to foreign capital investments. Oil, mining, steel, chemical plants, shipbuilding, paper, sugar, coffee, soya, rice, corn and cotton -- exports essentially intended for the European Common Market and the United States -- are the fundamental items of agro-industrial development. The policy, related to the adopted economic model of competition and integration, is based more on growth than on distribution of wealth. The philosophical approach is "to grow in order to make possible later partition of wealth and not of misery." The priority therefore lies in the maximization of the rate of economic growth and not in the correction of present social inequalities. These inequalities are to be minimized in a modest way, however, through indirect mechanisms of housing, welfare and educational programs. This type of development has created already "two Brazils." One is the Rio de Janeiro-São Paulo axis with its surrounding areas; the other comprises most of the rural areas, containing scattered islands of development.

Class Structure

Brazil maintains a structure of strong class differences. The middle class of 20-30% is expanding and its children are reaching advanced levels of education. Salaries fluctuate widely, reflecting and causing extreme social disparities. In the federal civil service the ratio between the highest and the lowest pay scale is 7-8 to 1, but in the private sector it is out of reasonable

proportions. The minimum salary in the rural areas is still extremely low, averaging about 30-40 dollars a month.

Educational System

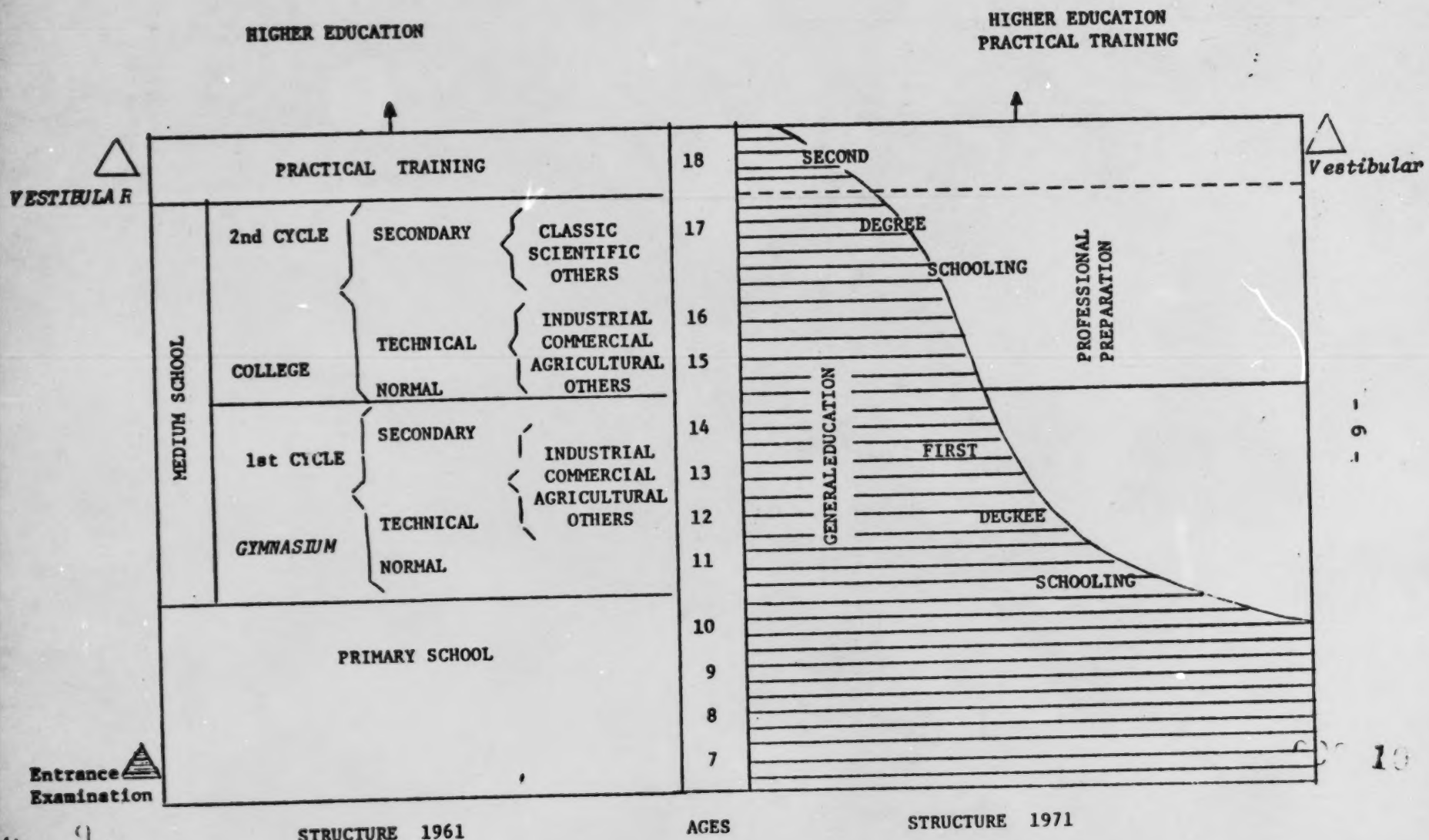
The Brazilian Constitution requires that education reflect the principle of national unity. Yet the implementation of laws concerning education is extremely heterogeneous. This is attributable to the diversity of the population and is further aggravated by urbanization.

The present structure of the Brazilian educational system (see Chart I), provides for eight years of compulsory education beginning at the age of seven. (Before the last reform education was compulsory for only four years.) First Degree Schooling (elementary) is followed by a three or four year course designated as Second Degree Schooling (secondary). The latter is the preliminary stage to the Third Degree Schooling (higher education). After primary school comes the medium school, which is divided into two cycles: gymnasium, four years, and college, three years, both with diverse modalities.

In 1973 over 19 million children were enrolled in the First Degree program (compared to 11 million in 1963); 1.4 million were enrolled in the Second Degree program (compared to 0.5 million in 1963). Higher education registered 811,000 students in 1973 compared to 124,000 in 1963. In brief, during the decade 1963-73 enrollment in the education system increased about 87%, with a rate

CHART I

BRAZILIAN EDUCATIONAL SYSTEMS



SOURCE - Education Alternatives - Esther de Figueiredo Ferraz - 1976

of 73% increase in elementary schooling, 180% in secondary schooling, and more than 500% in higher education.

Looking more closely at the 1973 data, however, we must conclude that there are still severe barriers between school levels. The numbers reveal that out of 1,000 finishing the elementary level only 10% went on to the secondary schools; from the secondary level to higher education the rate of flow was 63%. Thus, only 6.3% of those who entered the system at the elementary level went on to the higher education stage. If we define an ideal model for a service-industrialized society as one with a compulsory common degree (elementary and secondary education) and one in which higher education admits 20-30% of the appropriate age-group, then we must conclude that Brazil is in a stage of potential growth.

The problem in Brazil becomes even more complex when we remember that the above data are based on the number of students entering elementary school -- not on the total number of students at the age of compulsory education. In 1974, according to governmental statistics, only 80% of the total were enrolled in the system.

In order to understand the educational evolution more clearly, we present in Chart II the regional distribution of the students at the elementary and secondary level. Charts III and IV show the flow through the corresponding systems for the periods 1952-1962 and 1962-1973, taking 1,000 students as a base.

A broader picture of the educational spectrum of the Brazilian

CHART II

STATISTICAL DATA OF FIRST AND SECOND DEGREES

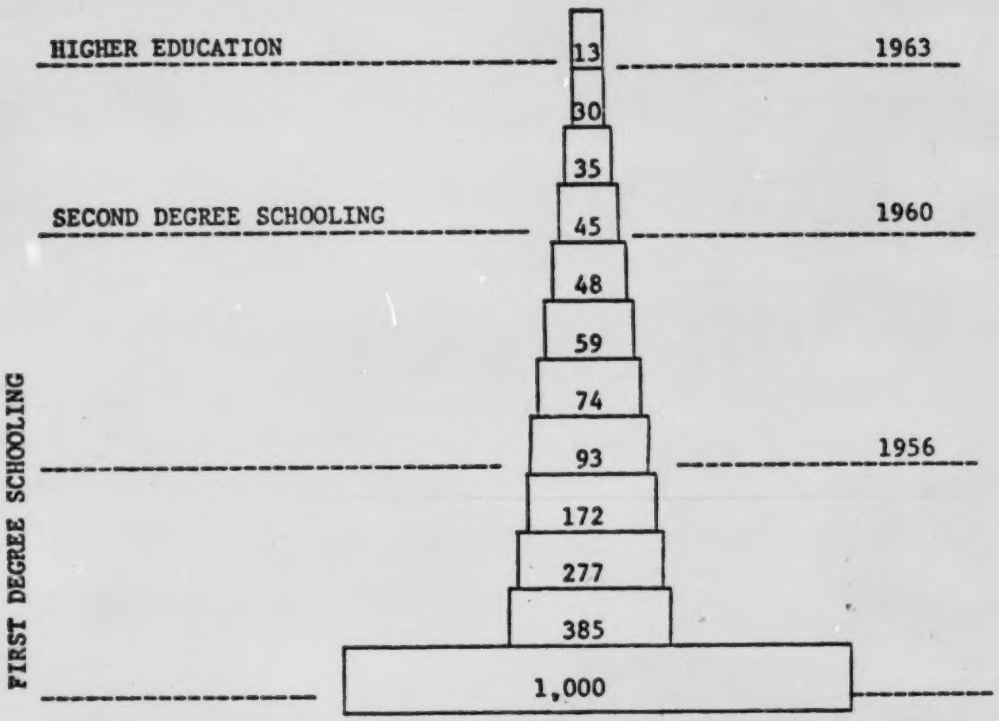
REGIONS	ESTABLISHMENTS			STUDENTS			TEACHERS	
	Total	1st Degree	2nd Degree	Total	1st Degree	2nd Degree	1st Degree	2nd Degree
North	7,775	7,761	104	782,522	744,382	38,140	25,566	2,414
Northeast	71,817	71,602	1,109	5,255,541	4,981,638	273,903	174,357	21,281
Center West	9,178	9,086	289	1,276,081	1,202,056	74,026	37,922	5,370
Southeast	52,970	52,484	2,989	9,734,885	8,980,149	254,736	310,022	54,978
South	36,985	36,438	1,112	4,975,973	3,815,584	260,289	152,211	25,090
Brazil	178,725	177,372	5,603	21,215,002	19,023,900	1,401,094	700,078	109,113

Source - Brazilian Ministry of Education and Culture

CHART III

BRAZIL EDUCATIONAL PYRAMID

1952 - 1963



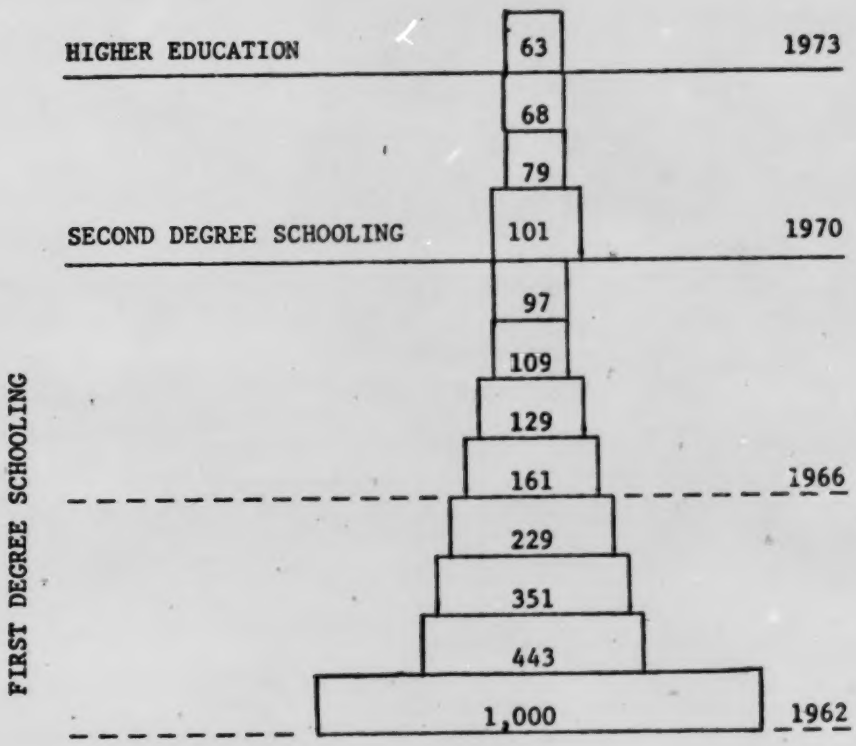
SOURCE - BRAZILIAN MINISTRY OF EDUCATION AND CULTURE

EDUCATION ALTERNATIVES - Esther de Figueiredo Ferraz - 1976

CHART IV

BRAZIL EDUCATIONAL PYRAMID

1962 - 1973



SOURCE - MINISTRY OF EDUCATION AND CULTURE

EDUCATION ALTERNATIVES - Esther de Figueiredo Ferraz - 1976

people must include the fact that, according to governmental data, illiteracy was 35% in 1970. A decline in the illiteracy rate to 26% in 1974 is partially attributable to the fact that since 1970 new systems of adult education have been developed. The historically high illiteracy rate results in great part from the fact that Brazil has never followed an overall religious pattern of education like the Protestant North Americans and only lately has it developed a standardized civic pattern of the Napoleonic type to create a uniform Brazilian citizenship.

II. The Higher Education System

A. General Aspects

The higher education system in Brazil has expanded dramatically in the last two decades. While its organization has deep traditional roots going back to the Portuguese colonial period, it has also been influenced through the years by the European and American structural modes. This diversity of influence has caused some contradictions in educational philosophy and its implementation.

The system is a comprehensive one, regulated by basic laws emanating from the federal government and embodying a complex distribution of power within the Union, the states and the municipalities. However, important functions are reserved for private initiative, especially in the financial area and that of local community control.

Three basic units compose the higher education system: universities, federations, and independent establishments.

The independent establishment is a self-contained pedagogic and scientific unit structured to offer the basic knowledge essential for the exercise of a profession. Independent establishments of the same or adjacent areas are also allowed to form federations which result in a coordinated administration and a unified status with regard to organization and functional criteria.

Since 1930 universities have fluctuated in concept from loose associations of a small number of independent institutions organized under a common administrative authority to a faculty and department organization along the lines of the European and American models.

In order to discuss some of the basic problems involved in the higher education organization in Brazil, we must first summarize briefly the number of institutions, student enrollment, qualifications, and work schedule of the teaching staff, and the number and nature of courses offered. At the same time, we hope to describe more clearly the country's heterogeneity by presenting some additional geographical distribution data.

1) Number of Institutions

The number of higher education institutions operational in 1974 was 848, comprising 57 universities, five federations and 786 independent establishments. The degree of expansion since World War II

is evident when one realizes that in 1940 the total number of institutions was only 36: six universities and 30 independent establishments.

These higher education institutions can be public (federal, state, municipal) or private. The public sector in 1974 comprised 37 universities, two federations and 178 independent establishments; the private sector comprised 20 universities, three federations, and 608 independent establishments. To illustrate the rate of growth, one notes that in 1940 the distribution was five universities and eight independent establishments for the public sector and one university and 22 independent establishments for the private. The private sector is predominant in the Southeast (89%) and the public sector in the North (82%). Table I presents the distribution in 1974 of the higher education institutions by regions and states.

2) Student Enrollment

During the period 1940-1974 total student enrollment rose from 27,671 to 897,200, with the number of degrees awarded in these years being 6,504 and 163,000, respectively. During this same period the number of new admissions increased from 9,200 to 365,000.

The average annual increase in student enrollment from 1970-74 was 21%, with the Southeastern Region contributing 64% of the total enrollment for 1974 due to the super-populated areas of São Paulo and Rio de Janeiro. The rate of dropouts and failures is extremely

TABLE I

HIGHER EDUCATION INSTITUTIONS

BRAZIL - 1974*

REGION/STATE	TOTAL	UNIVERSITIES				FEDERATIONS			INDEPENDENT ESTABLISHMENTS			
		F	S	M	P	F	S	P	F	S	M	P
NORTH	*11*	*3*							*2*	*4*		*2*
Acre	1	1										
Amazonas	3	1							1	1		
Pará	7	1							1	3		2
NORTHEAST	*86*	*10*		*1*	*3*		*1*	*1*	*1*	*12*	*13*	*44*
Alagoas	5	1								1	2	1
Bahia	15	1			1			1		4		8
Ceara	17	1			1					4	4	7
Maranhão	3	1					1			1		
Paraíba	14	1		1							4	8
Pernambuco	25	2			1					1	2	19
Piaui	1	1										
Rio Grando de Norte	4	1							1	1	1	
Sergipe	2	1										1
CENTER WEST	*21*	*3*	*1*		*1*					*2*	*1*	*13*
Distrito Federal	8	1										7
Goias	10	1			1					2	1	5
Mato Grosso	3	1	1									1
SOUTHEAST	*591*	*9*	*3*		*9*	*1*		*1*	*13*	*38*	*47*	*470*
Espirito Santo	13	1								3	5	4
Guanabara	62	1	1		2	1			5	3		49
Minas Gerais	120	4			2				6	13	8	87
Rio de Janeiro	47	2			1					1	3	40
São Paulo	349	1	2		4			1	2	18	31	290
SOUTH	*139*	*5*	*2*		*7*			*1*	*1*	*20*	*24*	*79*
Paraná	42	1	2		1				1	15	6	16
Rio Grande de Sul	64	3			6			1			1	53
Santa Catarina	33	1								5	17	10
TOTAL	848	30	6	1	20	1	1	3	17	76	85	608

* From the Brazilian Ministry of Education and Culture's General Catalogue of Higher Education Institutions, 1974.

serious, especially in the lower classes. Table II shows the student enrollment evolution from 1940 to 1974.

3) Teaching Staff

In 1974 the number of teachers involved in the system was 75,931 with 81% of them working part-time (under 40 hours a week). This fact arises essentially from the predominance of private independent institutions whose schedules, commonly structured only for the learning process, do not require a majority of full-time teachers.

In the same year, the academic credentials of the teachers, a matter of extreme significance, were as follows: 11% with a Ph.D. degree or equivalent, and 10% with a Master's degree. The remainder had taken only a first higher education degree (53%) or an advanced specialized course (26%).

The academic credentials of the teachers have, however, been improving. In fact, in 1973 the number of instructors with only their first degree was 41,514 out of a total of 67,924 (61.1%), while in 1974 the number dropped to 40,294 out of 75,931 (53.1%). Such improvement in teacher qualifications has been possible because of the institutionalization of a national program of post-graduate studies.

The general teacher-student ratio is around 1:12, which is reasonable by European standards.

TABLE II

EVOLUTION OF BRAZILIAN HIGHER EDUCATION

ENROLLMENT*

YEAR	NEW ADMISSIONS	TOTAL ENROLLMENT	DEGREES AWARDED
1940	9,200	29,671	6,504
1950	14,600	48,999	8,303
1960	39,781	93,202	16,893
1961	43,240	98,892	18,226
1962	47,000	107,299	19,472
1963	51,751	124,214	18,926
1964	57,990	142,386	20,282
1965	57,469	155,781	20,793
1966	60,137	180,109	24,301
1967	80,915	212,882	30,108
1968	88,588	278,295	35,946
1969	143,008	342,886	44,709
1970	185,277	425,478	64,049
1971	221,645	561,397	73,453
1972	280,209	688,382	97,637
1973	320,476	811,237	129,122
1974	348,749	897,200	150,178
1975	365,000	940,000	163,000

* From the Brazilian Ministry of Education and Culture's General Catalogue of Higher Education Institutions, 1974.

4) Curricula

The higher education system has also endured a great diversification in the contents and geographical distribution of undergraduate courses. In 1974 the total number of curricula which were structured under federally approved basic requirements fell under 62 different headings. These courses were given in all institutions, resulting in a total of 3,198 classes. At the same time 176 classes were being given on an experimental basis but had not yet been fully accredited.

The distribution of classes by fields of knowledge is: (a) human sciences -- 1,501, with emphasis in education, administration, economy, business and law; (b) exact sciences -- 764, the greatest numbers being in mathematics, physical sciences and geography; (c) biological sciences and health -- 434, distributed into nine different programs, with medicine, physical education and biological sciences having the highest enrollments; (d) humanities and arts -- 302 and 133, respectively, with a higher proportion in languages, history, design, music and art education; (e) agrarian sciences -- 59, with five different programs, the greatest enrollment being in agronomy and veterinarian science.

The total number of undergraduate curricula available in 1974 showed an overall increase of 9% from 1973. Post-graduate programs basically began in 1970 and by 1974 already numbered 393, an increase of 31% from 1973. The fields of knowledge having the most post-graduate

programs in 1974 were exact sciences (152), biological sciences and health (108), human sciences (79), agrarian sciences (35) and humanities (27).

Tables III and IV give more detailed information about undergraduate and post-graduate programs, degrees awarded and the geographical distribution of curricula, teachers and students.

B. Genesis of the Higher Education System

1) Brief Historical Background

Brazil was under Portuguese domination from 1500 until 1822, the year of her independence. During the three centuries of colonial administration and just over one and a half centuries of independence, three distinct educational periods may be noted:

a) The first period spans the time from the great maritime discoveries to the period of the Republic. The Portuguese language was defined as the fundamental tool to preserve cultural unity. Despite all criticisms or panegyrics, Portuguese humanism has contributed towards the formation of a potential harmonic society. During this era, education was defined and organized to achieve a single objective: formulation of the spirit by essentially cultivating the "belles lettres." In such a society there was no recognized connection between socio-economic needs and education.

b) Although progressive ideas came with the independence of Brazil and were greatly influenced by the ideals of the French

TABLE III BRAZILIAN HIGHER EDUCATION - 1974*

REGION/STATE	NO. INSTITUTIONS	COURSES		TEACHING STAFF						TOTAL	STUDENTS		
		UNDER GRADUATE	POST GRADUATE	WORKING STATUS		QUALIFICATIONS					NUMBER	DEGREES AWARDED	ADMISSIONS 1975
				PART TIME	FULL TIME	FIRST DEGREE	ADVANCED COURSES	MASTERS	DOCTORATE				
NORTH	*11*	*74*	*4*	*1548*	*198*	*1188*	*442*	*83*	*33*	*1746*	*17336*	*2050*	*5505*
Acre	1	7		62		58	3		1	62	794	134	240
Amazonas	3	23		402	77	399	52	12	16	479	4064	827	1185
Pará	7	44	4	1084	121	731	387	71	16	1205	12378	1089	4080
NORTHEAST	*86*	*407*	*41*	*10564*	*1743*	*7477*	*3356*	*1013*	*461*	*12307*	*112200*	*15082*	*37279*
Alagoas	5	40		702	66	555	173	38	2	768	5003	854	2350
Bahia	15	80	12	2416	297	1805	592	207	109	2713	25278	4147	7615
Ceará	17	77	5	1485	343	1136	306	289	97	1828	15390	2050	5185
Maranhão	3	27		737	44	560	169	48	4	781	5863	841	1760
Paraíba	14	73	4	1164	300	584	740	115	14	1464	15985	1155	5869
Pernambuco	25	121	20	2830	377	1857	902	238	210	3207	33496	4740	10495
Piaui	1	16		173	111	181	93	7	3	284	2207	336	715
Rio Grande de Norte	4	41		726	190	552	323	37	4	916	6673	702	2140
Sergipe	2	22		331	15	137	58	34	7	346	3405	257	1150
CENTER/WEST	*21*	*156*	*10*	*2414*	*716*	*1820*	*644*	*367*	*289*	*3120*	*42586*	*5610*	*14364*
Distrito Federal	8	57	9	652	451	415	269	215	204	1103	21171	2790	5790
Goias	10	53	1	1121	172	812	264	136	81	1293	14240	1834	5590
Mato Grosso	3	48		641	83	593	111	16	4	724	7175	986	2983
SOUTHEAST	*591*	*1996*	*281*	*36255*	*9174*	*22264*	*11567*	*4917*	*6581*	*45329*	*573788*	*104786*	*250184*
Espirito Santo	13	43		925	93	657	237	103	21	1018	11294	1465	3690
Guanabara	62	273	89	7560	1763	5036	2354	1189	744	9323	112193	16573	36918
Minas Gerais	120	418	44	7035	1153	4387	2220	785	796	8188	91142	15789	34537
Rio de Janeiro	47	168	24	3778	406	2528	1252	254	150	4184	49218	5887	16480
São Paulo	349	1094	124	16857	5759	9656	5504	2586	4870	22616	309941	65072	158559
SOUTH	*139*	*649*	*57*	*11028*	*2401*	*7545*	*3916*	*1247*	*721*	*12329*	*150290*	*22650*	*57623*
Paraná	42	204	7	2973	1073	2188	1351	281	226	4046	47426	7942	19538
Rio Grande de Sul	64	345	43	6500	1096	4239	2223	713	421	7596	84870	12327	31214
Santa Catarina	33	100	7	1555	232	1118	342	253	74	1787	17994	2381	6871
TOTAL	848	3374	393	61709	14222	40294	19925	7627	8085	75931	897200	150178	364955

* From the Brazilian Ministry of Education and Culture's General Catalogue of Higher Education Institutions, 1974.

TABLE IV

COURSES AND STUDENTS - BRAZIL 1974 *

TYPE OF COURSES	NUMBER OF COURSES	NUMBER OF STUDENTS	DEGREES AWARDED	ADMISSIONS
ADMINISTRATION	192	77422	11144	31760
SURVEYING	4	611	140	210
AGRONOMY	28	10832	1811	3005
ARCHITECTURE AND URBAN STUDIES	29	12006	1030	3184
PRACTICAL ARTS	14	3541	1614	1905
LIBRARY SCIENCES	23	3626	749	1470
GENERAL SCIENCES	130	16591	4086	11996
ACTUARIAL SCIENCES	9	684	30	406
BIOLOGICAL SCIENCES	85	16364	2859	6536
ACCOUNTING	139	26114	3406	14669
ECONOMIC SCIENCES	119	44596	6857	15112
SOCIAL SCIENCES	77	11746	2393	6619
SOCIAL COMMUNICATION	55	17457	2217	8452
VISUAL COMMUNICATION	9	718	114	410
DANCE	1	89	10	40
DESIGN AND PLASTIC ARTS	31	3681	556	1990
INDUSTRIAL DESIGN	10	914	137	495
LAW	122	95850	17059	25671
DOMESTIC ECONOMICS	7	897	99	450
ART EDUCATION	34	5584	1075	3788
PHYSICAL EDUCATION	76	17683	4805	10005
NURSING & OBSTETRICAL NURSING	43	6446	1216	2542
CIVIL ENGINEERING	69	32751	4725	8280
MINING ENGINEERING	6	470	86	185
OPERATIONAL ENGINEERING	28	14079	1494	5100
FISHING ENGINEERING	2	387	36	110
PRODUCTION ENGINEERING	3	445	90	2
ELECTRICAL ENGINEERING	46	14747	2061	4027
FORESTRY ENGINEERING	7	1008	141	265
MECHANICAL ENGINEERING	44	10733	1504	3459
METALURGICAL ENGINEERING	14	1507	209	583
NAVAL ENGINEERING	2	309	68	2
CHEMICAL ENGINEERING	27	4956	679	1427
STATISTICS	13	1545	136	814
SOCIAL STUDIES	153	17841	5512	15654
PHARMACOLOGY	28	7610	1640	2171
PHILOSOPHY	56	5076	1181	2925
PHYSICS	54	8077	936	3953
PHYSIOTHERAPY	8	974	232	338
EDUCATION (PROFESSIONAL DISCIPLINES FOR HIGH-SCHOOL)	11	1473	313	2405
GEOGRAPHY	91	9713	2340	5727
GEOLOGY	16	2478	278	845
HISTORY	122	14850	3130	8697
HUMANITIES	302	74285	16456	38735
MATHEMATICS	164	31007	4665	14160
MEDICINE	74	52051	7588	8567
VETERINARIAN MEDICINE	21	6258	887	1707
METEOROLOGY	2	122	4	90
CURATORIAL SCIENCE	2	249	52	110
MUSIC	43	3007	544	3824
NUTRITION	9	1504	248	560
ODONTOLOGY	54	16400	2792	4322
PEDAGOGICS	284	70709	19229	40858
PHYCHOLOGY	61	26775	3114	8715
CHEMISTRY	54	7694	841	3153
INDUSTRIAL CHEMISTRY	11	1175	145	577
SOCIAL SERVICE	49	11862	1988	4420
THEATER	5	279	35	136
OCCUPATIONAL THERAPY	4	157	44	82
TOURISM	15	4176	285	2805
ZOOTECHY	6	759	87	320
MISCELLANEOUS	-	15289	976	5623
EDUCATION (BASIC CYCLE)	-	48951	-	1760
TOTAL	3198	897200	150178	358224

* From the Brazilian Ministry of Education and Culture's General Catalogue of Higher Education Institutions, 1974

Revolution and the American Constitution, it was the Republic (established in 1889) which generated the new ideas that defined education as a right for all citizens and shaped education to the national characteristics of Brazil.

Because at the onset of educational reforms the traditional social structure (and therefore class division) was maintained, the process of educational expansion faltered. With the advent of the Republic two fundamentally opposite attitudes were brought to the fore: The so-called "Renovation" movement tried to institutionalize a public school system that was open to all Brazilian citizens and capable of contributing to the national character, while the "Traditional" forces tried to uphold education as the privilege of a small group intimately linked to a socio-political elite and to the major financial groups.

c) In 1930, with the fall of the First Republic and the triumph of more progressive ideas, a process of transformation was initiated. This oscillated between democratic and dictatorial regimes. (Brazil is currently under a military regime established in 1964.) Simultaneously, the pressures of growth and development were making themselves felt -- industrialization and agricultural mechanization demanded new technicians with new types of training and diversified "know-how"; the increase in population aggravated the possibilities of access to education for major sectors of society; urbanization produced the complex problems of housing, public health, administrative

organization, educational planning, and mass transit; the development of mass communication, press, radio, and television, gave rise to more citizen participation in the debate of ideas, comprehension of the function of education, and an increase in the impact of community interests. In spite of its correlation to societal configuration, only in 1960 did education become more directly related to economic planning and development.

Because of the subsequent increase in the complexity of social organization, the educational system entered a profound crisis requiring both quantitative answers to the question of mass education and qualitative answers to the question of modern technological and scientific development.

2) Foundation of Higher Education Establishments

Brazilian culture has strong roots in the Portuguese, inheriting as it has the traditional values of a classic-humanistic education and a similar juridical mentality, especially in the civil service organization which includes public education.

During a great part of the colonial period the Portuguese felt that higher education should not be institutionalized in Brazil because they believed that it was sufficient to allow some Brazilians from a small elite to go to professional faculties in Coimbra University in Portugal or to other European universities, mainly in France. Only about 3,000 students during the entire colonial period took degrees abroad.

The Jesuits, receiving from the Portuguese crown "all the obligations coming from public instruction," established a few colleges accessible only to clergymen and, again, to a small elite. The actions of the Jesuits in this instance have been called that of "pure European agents engaged in the disintegration of native values" and also "the most extraordinary contribution to the educational tradition in Brazil." In 1759 the Jesuits were expelled from Brazil by the Portuguese Prime Minister, the Marquis of Pombal. He tried to reorganize a new education system at home by amalgamating traditional classicism with French encyclopedism and by modifying the pedagogic tradition with the introduction of mathematics and modern languages into the curricula. Because Brazil was not prepared for a similar evolution, the Pombal reforms had an impact only on secondary education and none on higher education, which was still practically nonexistent.

Considering all of the above, we can say that proper higher education institutions were founded only when King John the VI of Portugal established his court in Rio de Janeiro (1808) after escaping from the Napoleonic invasion of the Iberian Peninsula. During this period and the Imperial period that followed after independence (1822), the institutions created were independent establishments of a bourgeois origin and utilitarian nature, influenced by classical instruction and dominated by the liberal professions. Independence did not change the educational philosophy,

since the elite was small, homogeneous, and studied mostly in Portugal. "I am a Coimbra man born in these mountains," said one Brazilian leader.

So it was that schools of medicine and surgery were institutionalized in Bahia and Rio de Janeiro in 1808 and 1809, respectively. Law schools were installed in Olinda and São Paulo in 1827 and, soon afterwards, the Polytechnical School of Rio de Janeiro and the Mining School of Ouro Preto in the state of Minas Gerais were founded. The apex was to be a licenciado of law in a society in which the title was of great importance for social ascent. Society was dominated by a "culture of spirit" which had no connection to scientific or technological knowledge or to the labor market. Mechanical arts and industrial learning were introduced to secondary education only in 1838 and the first chemical engineers were imported from Germany in 1867.

The Republican period, which began in 1889, initially followed the same pattern and added eight schools of medicine, eight of engineering and 17 of law.

3) University Versus Independent Establishments

It is obvious, then, that in Portuguese-speaking America the birth of higher education was different from both the original European tradition and from that of Spanish-speaking America. Brazil began with an independent professional school model, while

Spanish-America created direct copies of Spanish universities (the first one in 1537).

This type of distortion in Brazilian higher education is termed "original sin" by many Brazilian sociologists and over the years has given rise to what has been described as "the fight for a university in Brazil," a fight as old as Brazil itself. This fight can be divided into three stages: to have the institution, to structure the institution as a university, and finally, to put the university to work.

The problem of the university versus the independent establishment was so profound that only in 1920, after foiled attempts in Manaus-Amazones (1909) and Paraná (1912), was the first university founded in Rio de Janeiro. The university institution created, however, was merely a loose association of several independent establishments already in existence and which still retained all of their individual privileges. It could even be said that the students did not realize that they were studying in schools belonging to a university. Finally, a national inquiry promoted by the Association of Brazilian Educators (1920-1929), the II National Conference of Education (1928), and the new triumphant ideas of the 1930 Revolution opened the way for revision of the higher education structure in accordance with a more authentic university framework.

The fundamental legislative step in this direction came with the 1931 Education Reform's introduction of the institutionalization

of a Faculty of Education, Arts, and Sciences. This unit was defined as being responsible for the cultural life of the country, giving a proper university character to the associated institutes, transcending the limits of pure professional interests and substantiating in all aspects the high and authentic values of culture, thereby giving character and individuality to the university.

Nonetheless, the conservative forces allied with the independent professional schools maintained such strength that in the Basic Law of Higher Education published around this same period the new Faculty of Education, Arts, and Sciences did not have to be included in the university institution.

The "university cause" gained a new impetus in 1934 with the creation of São Paulo University, which associated several independent institutions with a new faculty then called the Faculty of Philosophy, Sciences, and Arts. This was designed to be a great force capable of providing a solid cultural and basic scientific preparation essential to all the professional institutes of the university. At this time, one Institute of Education was also created for pedagogic studies related to the training and specialization of teachers.

In 1935 the University of the Federal District in Rio de Janeiro was founded. This time the model created consisted of three fundamental units -- the School of Sciences, the School of Philosophy and Arts, and the Institute of Fine Arts -- surrounded by the

professional institutes, including the School of Education.

The crucial problem between universities and independent establishments was not resolved, however, and has been evolving with a series of advances and recessions. The traditional professional schools, associated with politically conservative forces, refused to transfer basic learning and research operations to the new faculties. As a result, in the '40's and '50's, these faculties suffered the deplorable transformation into another professional school of education. However, one successful university experience was that of the University of São Paulo which, with the cooperation of European scientists, was capable of developing a new school of thought, especially concerning the basic fields of knowledge, and of institutionalizing fundamental research as a university function.

When the University of Brazilia was founded in the new capital in 1961, however, it became possible to develop a modern concept with eight central institutes acting as pillars of support for the whole group of professional courses. In this case the task was to establish within an artificial city, Brazilia, a cultural center capable of giving life to the city while serving as a focal point for modern sciences and technology.

From 1961 with the publication of a Basic Law of Education to today, the institutional structure of higher education has gone through profound transformations. To understand this blend more thoroughly, let us summarize the basic laws that have been published concerning higher education.

4) Basic Higher Education Legislation

The political Constitution of Brazil has undergone several transformations, all of which, after the proclamation of the Republic, have stressed the value of education.

The Constitution of 1891, the first republican one, made primary school compulsory, even if it did not deal with the obvious relevant social and economic problems. With the 1930 revolution great modifications occurred in the former liberal state. More state interference appeared, as symbolized by the creation of the Ministry of Education. The 1934 Charter gave the Union the authority to structure a national plan for education. It was hoped that the plan would include all the normal levels and specialized degrees and that the Union would coordinate its details and finance its execution throughout the country. However, in November 1937, a new Constitution was published which changed the national plan concept to one that would legislate with the purpose of "defining the bases and determining the structures of national education." The Union, the states, and the municipal institutions became responsible for insuring a proper education for all children in cooperation with their families, while professional education emerged as the primary duty of the public powers. The concern about education corresponded to the ideological trends of the respective periods. Consequently, the 1934 Constitution spoke of the right to education and that of 1937 spoke of the duty of the state towards education.

Similar to the 1934 philosophic principles, the 1946 Constitution devoted a complete chapter to education and culture. In this, education "given in the family and the schools under the principles of freedom and human solidarity" was declared "the right of all people." The charter went on to define the financial sources for the education system and the responsibilities of both the Union and the states.

Education at all levels was made the responsibility of public administration, but private initiatives were also encouraged to participate under the law. Industrial, commercial and agricultural enterprises became responsible for financing the primary education of their workers and their workers' children. In principle, the states were considered responsible for their respective school systems. However, the Union was also made accountable for a federal system meant to complement that of the states. Even a fixed minimum percentage of taxes applied by the Union, states and municipalities towards education was written into this charter.

In 1961, after several years of discussions, a complementary constitutional law directed towards educational problems was approved by the National Congress. Unfortunately, this supposedly fundamental tool was not as innovative as was hoped and was too subject to diverse interpretations. In terms of the higher education structure, this law pretended to achieve a compromise between the antagonistic positions of the university and the independent establishment. In

fact, the law stated that the universities were to be created by the association of five or more independent establishments which would then be under a common administration. Both of these institutions -- the university and the independent establishment -- were to have the cooperation of research institutes and professional training centers when desired.

In March 1964 a revolution took place in Brazil. A new Constitution, approved in 1967, gave more socio-political control to executive power. The individual rights expressed in the 1946 Constitution were retained but now "could be suspended if they were abused."

The education chapter seemingly received only small modifications, the major change being that the minimum percentage of taxes applied by the Union and the states towards education was no longer fixed by the Constitution. But a basic innovation was introduced: The concept of national security (which was amplified by a 1969 revision) established that "each natural or juridical entity is responsible for national security in the terms defined by the law." Because education was integrated with the civil service, this innovation naturally had serious implications for the education community. The socio-political philosophy behind this concept was a strong obstacle to creativity and independence of thought, the basic cornerstones of academic freedom. Also, it opened the doors for a day-by-day interference by the state in the problems of the institutions and caused profound divisions in the academic communities.

(In the long run, this concept hopelessly and wrongly politicizes the university.) Nonetheless, even with this background in mind, the reform movement in higher education made important strides and achieved some practical results.

C. Fundamental Aspects of Higher Education Reform

The successive reforms of higher education developed after 1961 were influenced by new ideologies, the 1964 March Revolution, technocrats trying to use the system as a tool for economic development, student movements, and, more recently, by international and internal economic crises.

From the 1964 March Revolution to the present, the Brazilian political process has been evolving with intermittent periods of relaxation and tension followed by renewed tightening of governmental control, all of which are obviously causing repercussions in the higher education system. Today the dominant forces believe in strong government, planning in decision-making, authority in policy-making, and a strong federal role in labor, economy, and education. During this process the participation of economic technocrats, mostly trained in post-graduate courses in the United States, has been decisive, the greatest effect being felt in the areas of development and planning.

In practical terms, new higher education reforms began with laws, published in November 1966 and February 1967, that established the principles and regulations regarding the organization of federal

universities. Their purpose was to concentrate those material and human resources capable of increasing productivity which, due to a deficient structural organization, had fallen to an extremely low level. The proclaimed purpose of these laws was not, however, to impose a single model for the university institution because, as was stated, there were many diverse institutional dimensions, proper short-range objectives, and regional peculiarities.

By November 1968 and February 1969 more general laws were published in relation to the organization and activities of the entire higher education system and its articulation with the secondary schools. Also, in July 1971, important legislation was published with details about access (vestibular examination) to universities and other establishments.

Several other bills, decrees and regulations were passed during the period 1961-1974 which, together with the above-mentioned, fashioned a new model for the Brazilian higher education system. Let us summarize and discuss some of the fundamental principles and consequences of these reforms.

1. Centralization and Decentralization

In a country so diverse and with such tremendous size and population, the question of centralization versus decentralization of the educational system is a fundamental one. Discrepancies have developed in Brazil between a rigid system, controlled by the federal government in the name of equality and pedagogic uniformity, and the autonomous multi-state organizations with their local centers

of power merging toward academic equivalencies. The fear of a schism in the country's educational system has always been evident, even in the legislation itself.

As we have stated, educational laws and ordinances concerning school systems must adhere to certain basic guidelines emanating from the Union. In addition, the Union also runs a federal system, especially strong in higher education, which is more than complementary or supplementary and behaves as a supra-system. In fact, out of the 37 public universities operating today, 30 are run directly by the Union.

Federal control of education is chiefly upheld by two bodies, the Ministry of Education and Culture and the Federal Education Council. The former was reformed in 1970 to provide greater efficiency for a huge machine, which, under a bureaucratic overload, had become completely unmanageable. Today the educational policy-making forces are clearly under the control of the Minister of Education and Culture and the Ministry of Planning, which is responsible for the country's budget, the financial sources for education, fiscal operations and manpower planning.

The Federal Education Council, in order to adequately represent the country's various regions, consists of 24 members who are nominated by the President of the Republic. The Council has the authority to make autonomous decisions within the law or to advise the Ministry of Education and Culture about the creation and

supervision of federal and private higher education institutions, the recognition of state establishments, and the integration of schools into the federal system. The Council also approves or proposes to the Ministry the ratification of the status of universities, the annual reports, and establishes the minimum curriculum and basic requirements for degrees. Also, it makes decisions concerning student transfers and equivalencies of foreign degrees or diplomas. This federal body cooperates with special bodies of federal and state administrations about academic and financial matters, defines the scope of didactic, administrative, financial and disciplinary autonomy of universities, and makes recommendations about the policy of development and financial planning. Furthermore, the Council confers with the Minister of Education when suspending the autonomy of public or private institutions by the nomination of pro-tempore rectors and directors of university units.

If we proceed to the analysis of hundreds of regulations and resolutions of the Ministry and the Federal Council, we can see how strongly the central power is maintained. From 1961 to 1975 there were resolutions covering such wide-ranging subjects as the reconstitution of the Federal Council (to include two more government representatives), introduction of obligatory disciplines into all curricula, regulation of discipline codes for professors and students, inspection of establishments, norms for matriculation of students and determination of vacancies in the establishments,

procedures concerning professors' travel to foreign countries, regulation of the salaries for the entire academic community, introduction of guidelines for professors' recruitment, and financial assistance for the publication of textbooks.

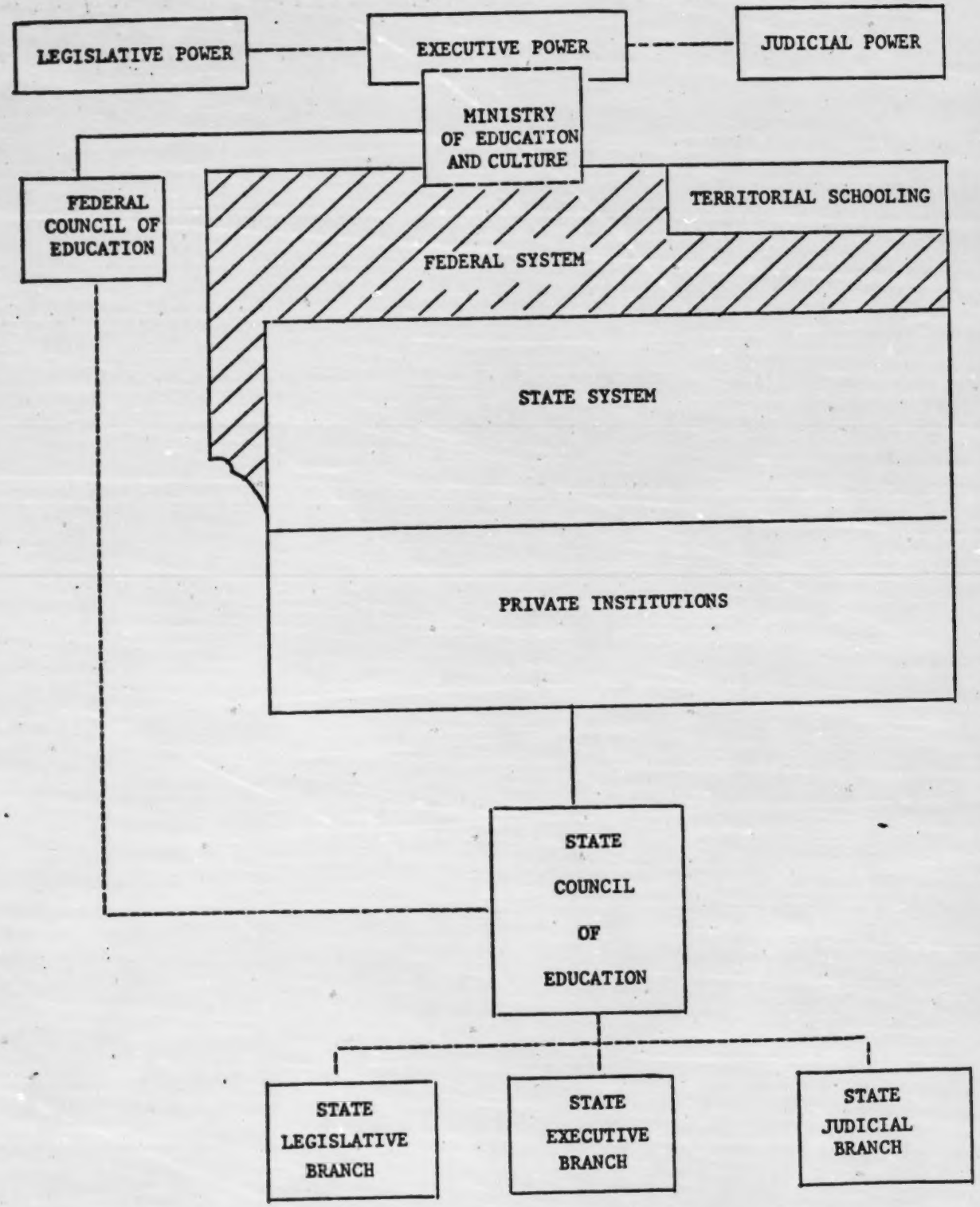
The state councils of education are also involved with the state institutions, especially in their finance and functioning, but their powers in many cases are secondary to that of the Federal Council. In short, we can assert that in terms of education there is essentially a national centralization associated with lesser state executive powers. Chart V illustrates the external educational power structure.

Although the Ministry and the Federal Council have dominant roles, universities and independent schools of higher education also maintain governing bodies. The rectors and vice-rectors of public universities or the directors of federal units or of independent establishments are chosen by the President of the Republic or the Minister of Education from a trio or sextet of nominees elected by the University Council or Congregation. These rectors are responsible for order and discipline inside the institutions and they can suffer governmental reproach for "abuse or omission" of their powers.

Central bodies like the University Council or faculties or school congregations and other internal bodies, with participation of teachers at all levels, have essentially a didactic, scientific function, supervising and coordinating teaching and research

CHART V

THE EDUCATION POWER STRUCTURE



Source: School Organization and Administration, Lourenço Filho, 1976

activities. There is also an internal Curators Council responsible for financial and economic matters. In this council one-third are representatives of the Ministry and the local community, and two-thirds are representatives of the institution.

Students may participate in some bodies and serve on other commissions in percentages defined according to the respective university's status, but they must have a certain academic standing. Students are also allowed to organize Directoriums within their institutions. Additionally, there is a private council of all university rectors which constitutes an effective lobby with a fair capacity to influence governmental policy.

In conclusion, because of the specifics of the law and the existence of "emergency powers," universities enjoy only a limited degree of autonomy.

2. Institutional Structure, Credits and Departments

As we have discussed at length, universities in the past were primarily looked upon as associations of independent units. It was only through the 1968 and 1969 laws that, for the first time, higher education, whether given in public or private institutions, was to be granted primarily by universities, and only by exception by independent establishments.

To clarify the circumstances under which future universities could be founded, these laws stipulated that universities could be organized without having to rely on established institutions, although

they could continue to result from the association of recognized establishments. In the first case the university has to be authorized and recognized, in the second, simply recognized.

These last law reforms also define indispensable principles for university organization: (a) a central unit for administration; (b) a departmental structure whether or not associated into faculties or institutes; (c) unity of teaching and research functions -- the duplication of investments for identical or similar objectives being forbidden; (d) rational organization with full use of material and human resources; (e) universality through the existence of fundamental areas of human knowledge, studies per se or for applications in one or more technical-professional fields; (f) flexibility in methodology and criteria, taking into account individual student differences, regional peculiarities, and possibilities of recombinations of knowledge towards new curricula and research programs.

As a consequence of these principles, the creation of the departmental structure, the abolition of the cátedra (chair), and the revision of credit system followed.

The departmental structure is directly related to teaching-research indivisibility and to non-duplication of resources for identical objectives. It also aims to end the practice of maintaining the same or similar laboratories of basic disciplines in multiple faculties because professors of one faculty could not use the laboratories of another.

Departments are now being substituted for the cátedras and are consequently destroying the absolutist power of the catedráticos professors within the university and are breaking down the isolation of faculties and schools. The teachers' participation in the governance has expanded proportionately. In fact, the cátedra was abolished by the new higher education organization in the 1968 law to make it possible for professors of all levels to participate in internal academic government.

At the same time, out of a rigid structure with obligatory disciplines under a mandatory curriculum came a more flexible system of credits. Although still requiring a minimum curriculum for a profession, students were now allowed some measure of free choice and were able to register by disciplines. This also facilitated course completion according to their capacity. Simultaneously, semester classes were introduced.

The reforms of federal universities (30 institutions) are being applied to the others: seven with public status (six state and one municipal with São Paulo in the vanguard) and 20 private ones (11 Catholic and nine supported by a trust, foundation, association or institute).

Meanwhile, the independent schools continued to expand in such a way that in 1974 the number recognized was 786 (608 private and 178 public). These independent schools are extremely diversified in organization, showing clearly the power of the educational tradition.

The majority of these establishments are called Faculties, although one finds erratic deviations such as Schools, Centers, Institutes, Societies, Conservatories, Academies, Associations, Foundations, and Corporations. As examples, it is possible to find independent institutions with such confusing names as the Faculty of Tourism, the Faculty of Philosophy, Science and Arts, Centers of Public Relations, Association of University Learning, Foundation of Applied Sciences, and all with reduced curricula.

3. Articulation of Secondary and Higher Education

Two fundamental attempts have been made to improve articulation of secondary and higher education: (1) restructuring of the access examination in terms of contents and organization; and (2) the institutionalization of a two-year general cycle of studies.

a. Access to Higher Education

Concerning the problem of access, the fundamental questions were those of social demand and corresponding distribution by fields of knowledge, the expansion and flexibility of the system, the conditions of the labor market, and the discrepancy between northern and southern Brazil -- basically the urban and rural areas.

Because the number of applications by far exceeds the capacity of the system, admission has endured tremendous problems. The process, however, has been under constant modification and improvement. Initially, the only basis for access was a competitive college entrance examination made compulsory by a 1961 law which also gave

each higher education institution the right to establish its own entrance examination. These examinations were specific to each curriculum.

Year after year the tests became more difficult and were organized with such a severity and sophistication that the testing level had little connection with the general secondary education program. Consequently, only certain lower schools were in a position to reasonably prepare their students and the door was opened for the development of a year-long intensive course, cursinho, taken after completion of secondary school and for the sole purpose of passing the college entrance examination.

Because of the high rate of failure, students also began to take exams in more than one field. As a consequence, administration became more complex, since the calculation of the exact number of student applicants was difficult. The sum of all the confusion was that in many fields there were vacancies, while in others some students who had passed the examination were denied admission because there were not enough places for all (excedentes). In effect, the existing admission policy was an irrational numerus clausus.

These obstacles left the higher education institutions open to many criticisms, one of which resulted in tremendous socio-economic implications because it claimed that admissions policy did not facilitate lower-class participation in the system. Socio-economic data are still being collected in order to analyze this

aspect in more detail, although entrance to higher education institutions does seem to be essentially a middle-class phenomenon.

The entrance policy has been changing, however. First, the idea was advanced to have entrance examinations take place simultaneously in the entire country for each subject, but this was vetoed by the Ministry. From 1972 to 1976 the goal became to control the process by a unified regional entrance examination with mandatory participation by public institutions and optional participation by private ones. Regulations were published defining a new structure more concerned with the quality of the basic scientific preparation and the intellectual aptitude of the candidate than with detailed quantitative aspects of knowledge. The level of the entrance examination was developed in conjunction with the secondary school programs. Instead of being specialized according to fields of study, it was divided into three broad categories of knowledge: Communication and Expression (Portuguese Language, Brazilian Literature, and eventually a modern foreign language); Social Studies (geography, history and social and political organization of Brazil); and Sciences (mathematics, physics, chemistry and biology). In the case of Music, Plastic and Visual and Dramatic Arts, and Architecture, a specific aptitude test was administered before the general examination. Vocational tests were also added to provide guidance for the students, and counseling was also improved. It is possible that Brazil is heading towards an entrance

examination similar to that in the United States, since an admissions examination is still a necessary evil without which the education system would be debased.

b. General Cycle of Studies

Another fundamental point of the reform is the evolution from a solid one-tier to a two-tier organization through the creation of a first (or general) cycle of studies common to several professional courses of the same or similar nature. This reorganization was undertaken to improve students' preparation by providing a basic science and humanities background and thereby giving them the possibility to make more mature decisions about their future careers. Also, it was felt that professionals so prepared would be more able to learn new techniques and to adapt to rapid scientific progress.

It is interesting to note that from 1972 to 1974 financial priority was given to this objective by the development of laboratories for the first cycle of studies in the scientific area and by the reorganization and construction of buildings in campuses. The program was to develop and concentrate structures for teaching basic subjects.

4. Short-duration Curricula

Another aspect of education reform was the development of short-duration professional courses given in the universities with

the intent of filling a socio-economic and professional vacuum. These courses, organized under specific programs, were designed to correspond to the peculiarities of regional labor markets. The initial experiments in this field were in the realm of technology and resulted in intermediate higher education degrees.

The State Council of Education of São Paulo took leadership in this area with some experiments even before a law was published. Then the Sectorial Plan of Education 1972-1974 programmed 17 courses in such areas as textile engineering, administrative planning, operational engineering, telecommunications, refinement of sugar cane, orthopedics. . . . A 1975-79 plan projects the enrollment of 2,000 students in these areas and other new inter-disciplinary fields.

5. Academic Careers

Another area under revision is the academic career, which was organized into four stages -- instructor, assistant, associate and titular professors -- with basic requirements defined by law for movement from one stage to another.

The qualification and the improvement of the professor's status conforms to a national and regional policy defined by the Federal Council and is promoted by an Executive Commission with representatives of the National Council of Research, the Ministry of Planning and other subsidiary bodies in the Ministry of Education and Culture. The promotion from one scale to another is based on previous academic

qualifications and is decided in public contests, regulations of which are defined by ministerial decrees. Also established was an exclusive dedication program intending to increase the number of full-time professors engaged solely in teaching and research in the basic and professional fields.

After the program was started in 1970, university professors could choose several working schedules ranging from a base of 12 or 24 hours a week (part-time), to 40 hours a week (integral time), and ending with the exclusive dedication. The salaries were proportional to the working hours. Under the exclusive dedication program the professors received 20% more than those working under the integral time schedule, but they could not carry out any other public or private function. The number of professors with this status was about 10,000 in 1974. Table III (page 19) shows a distribution of the teaching staff by degrees and working schedules for the same year. To implement this program, the Commission for the Establishment of Integral Time and Exclusive Dedication was formed within the Ministry of Education and Culture. Under the program this Commission gave preference to professors in the areas of biomedicine, technology, basic sciences, and education.

This reform is one of the most important changes underway because it was devised with the idea of building inside the university a "thoughtful community" and not an "association of occasional visitors." In fact, the progressive implementation of this program

is essential to the future quality of the university because it provides a prohibition against the traditional practice of professors, employed in a low-paying, high-prestige job, spending only a few hours a week at the university and using their upgraded social status as a steppingstone to greater personal wealth. Before the reform began, exceptions to this practice could only be found in the departments of basic sciences and humanities and in the University of São Paulo, where research was highly developed.

However, most independent establishments, particularly the private ones, do not adhere to this program, thereby forcing their professors to teach at several institutions simultaneously (to earn a reasonable salary) and therefore to concentrate only on the everyday routines of teaching. Also, they work with high student-teacher ratios. All this makes it impossible for them to have time to develop innovative ideas or to participate in research projects. This is most unfortunate, for the role of the independent schools in terms of the general quality of education is very important, with more than 50% of all students enrolled in higher education attending these establishments.

6. National Post-Graduate Studies

In close association with the exclusive dedication program was the development of a national policy on graduate studies. The institutionalization of these studies in the university has been intrinsically connected to the development of the academic career

and has become a mandatory mechanism for the production of qualified teachers.

The courses, which began to be properly defined in 1965 (only a few in 1961), conformed to three fundamental objectives: (a) training of teachers capable of responding to the expansion of higher education and guaranteeing levels of quality; (b) giving incentives to scientific research development; and (c) promoting the improvement of technicians and scientists. To implement these objectives, the government divided the post-graduate programs into two groups: the normal courses and the occasional specialized courses. The former were systematically organized to lead to Master and Doctorate degrees, and the latter necessitated a choice between two alternatives: (a) the academic -- arts, sciences, philosophy and humanities; and (b) the professional -- for all the other fields.

With the idea of preserving a national standard, the Federal Council became responsible for determining the proper minimum requirements for all post-graduate courses and for the admission of students as well as for accrediting and establishing the human and material conditions necessary for a school's participation in the program.

Because post-graduate courses were special symbols of status and privileges for the schools, most of them quickly set up courses but did not bother to have them accredited. To stop this proliferation,

which seriously threatened the quality of and standards for degrees, the government tried to organize regional centers for research and post-graduate studies. Through these centers institutions could work to combine their resources (to meet the minimum requirements necessary for recognition by the Council) and to establish priority for courses connected to the socio-economic development of their respective regions. At the same time, the National Commission for Regional Post-Graduate Centers was devised to coordinate the activities of these centers. Finally in 1974, the Ministry of Education and Culture created the National Council of Post-Graduation to synthesize the entire process.

In 1968 there had been 115 post-graduate courses (81 for Masters, 34 for Doctorates). Only six years later, in 1974, this number had risen to 645 (478 Masters, 167 Doctorates) with 34.1% in biological sciences and health and 33.5% in exact sciences and technology.

Today there are 46 higher education institutions with post-graduate programs (25 federal, three state, 18 private) and the Federal Council (as of February 1974) has accredited 150 of the 645 courses available. The best post-graduate centers in the country are found in the University of São Paulo and the federal Universities of Rio de Janeiro, Minas Gerais, and Rio Grande de Sul.

Charts VI and VII show the number of post-graduate courses by fields of knowledge in 1974 and the number of Masters and Ph.D.'s in 1973. Chart VIII shows the 1975 estimates of enrollment capacity

CHART VI

HIGHER EDUCATION

POST - GRADUATE COURSES 1973

COURSE SPECIFICATIONS	MASTER	DOCTOR
Number of courses	251	48
Number of candidates (Faculty Members*)	2,757	416
Male	2,287	374
Female	470	42
Admissions 4-30-73	11,846	513
Graduates 1972	1,557	40

POST - GRADUATE COURSES FIELDS OF KNOWLEDGE

FIELDS OF KNOWLEDGE	COURSES	FACULTY MEMBERS*	ADMISSION	GRADUATES
		MASTER'S DEGREE		
Biological and Health Sciences....	69	670	1,708	99
Exact and Techonological Sciences.	91	1,139	5,160	533
Agrarian Sciences	18	288	698	116
Human Sciences	54	502	3,706	649
Arts Sciences	19	104	574	160
TOTAL	251	2,757	11,846	1,557
		DOCTOR'S DEGREE		
Biological and Health Sciences ...	11	111	142	8
Exact and Technological Sciences..	24	202	269	31
Agrarian Sciences	4	76	39	
Human Sciences	2	16	42	
Arts Sciences	7	11	21	1
TOTAL	48	416	513	40

SOURCE: Ministry of Education and Culture

*Faculty members teaching and furthering their education at the same time.

CHART VII

ACCREDITED POST-GRADUATE COURSES

FIELD OF KNOWLEDGE	Total		Accredited Federial Council of Ed.		Center of Excellence	
	%	Nº Courses	%	Nº Courses	%	Nº Courses
I Biological and Health Sciences	34,11	220	42,00	62	29.38	62
II Exact and Technological Sciences	33,49	216	24,00	36	49.76	105
III Agrarian Sciences	5,73	37	7,33	11	10,90	23
IV Human Sciences	16,28	105	7,33	11	8,53	18
V Faculties of Letters	10,39	67	19,34	29	1,43	3
VI Fine Arts	—	—	—	—	—	—
TOTAL	100,00	645	100,00	150	100.00	211

Source: Brazilian Ministry of Ed. & Cult.

CHART VIII

POST - GRADUATE COURSES

1975 ESTIMATES

MASTER'S DEGREE						FIELDS OF KNOWLEDGE	DOCTOR'S DEGREE					
%					TOTAL VACANCIES		TOTAL VACANCIES	%				
N	NE	CW	SE	S				N	NE	CW	SE	S
-	3	12	47	38	290	1. EDUCATION	-	-	-	-	-	-
-	10	12	71	7	290	2. PHYSICS	35	-	-	-	86	14
-	14	6	74	6	390	MATHEMATICS	35	-	-	-	100	-
-	14	10	64	12	290	CHEMISTRY	60	-	-	-	100	-
6	29	4	35	26	245	EARTH SCIENCES	35	14	14	-	58	14
-	12	24	56	8	595	3. BIOLOGICAL SCIENCES	95	-	-	-	90	10
-	8	25	48	19	330	4. SOC./ANTH./POL. SC.		-	-	-	-	-
-	8	13	67	22	120	PHILOSOPHY	-	-	-	-	-	-
-	10	-	69	21	255	HISTORY	-	-	-	-	-	-
-	-	-	100	-	85	GEOGRAPHY	-	-	-	-	-	-
-	27	23	27	23	220	ECONOMICS	5	-	-	-	100	-
-	-	-	72	28	215	PSYCHOLOGY	-	-	-	-	-	-
-	7	7	76	10	1,375	5. ENGINEERING	50	-	-	-	100	-
-	10	6	80	4	510	6. MEDICINE	80	-	-	-	1100	-
-	7	-	69	24	145	DENTISTRY	-	-	-	-	-	-
-	-	-	75	25	80	PHARMACY	10	-	-	-	100	-
-	67	-	33	-	30	NUTRITION	-	-	-	-	-	-
-	-	-	100	-	40	NURSING	-	-	-	-	-	-
-	-	13	74	13	235	7. ADMINISTRATION	-	-	-	-	-	-
-	11	-	83	6	235	LAW	25	-	-	-	100	-
-	-	-	100	-	20	LIBRARY SCIENCE	-	-	-	-	-	-
-	-	36	64	-	55	COMMUNICATIONS	-	-	-	-	-	-
-	4	24	44	28	270	8. AGRONOMY	35	-	-	-	100	-
-	-	55	27	18	55	VETERINARY SCIENCE	-	-	-	-	-	-
-	-	9	69	22	600	9. LETTERS	20	-	-	-	100	-
1%	9%	11%	65%	14%	7,050	TOTAL	485	1%	1%	-	94%	4%

SOURCE: Brazilian Ministry of Education and Culture

in Master's and Doctoral courses.

III. Comparative Problems in Academic Structures

When we try to describe the behavicr of a university model, a useful approach is to draw an analogy to a three-stage process in a thermodynamics system. The university does not constitute an "isolated system," even if the medieval ivory tower concept, under severe criticism in modern times, was an approximation of one. The input (first stage) of the system is comprised of the human and material resources and also of the acting external forces. Some of these are easily detected (e.g., the central or state authorities, parliaments and political parties, churches, financial communities, foundations), but others are more difficult to recognize, especially within greatly decentralized and diversified organizations and powerful private universities. In the latter instance, "invisible" forces and interest groups, acting outside the system or establishing connections in sophisticated ways with inside components, play an important role. Through these invisible and pluralistic forces more flexibility may be achieved in the structural evolution of the system. Further, in the second stage, mechanisms of conversion inside the university may be more dependent on internal forces, encouraging greater participation by the academic community, namely by administrators, professors, researchers, students. The academic structure assumes, then, various degrees of freedom, approaching independence from the government and from political

organizations. Americans use this pattern in part of their higher education system, protecting it from direct interferences by public power by adopting an "osmosis membrane" called the Board of Trustees, and by encouraging private donors, thereby creating an "invisibility" in certain aspects of the decision-making process.

In the centralized system, the predominance of power comes from more visible forces. These impose uniformity directly through laws controlling the nature of changes or directing university personnel on matters of advancing, restraining and orienting the dynamics of the institution. Therefore, in general, the human and material resources are mixed inside the system under the pressure of both internally and externally generated forces. Sometimes these forces are antagonistic; other times they are more complementary. The output is always subject to interpretation, since the measurement of system efficiency is subjective. National or international indicators can help, but only in specific cases. The fact is that, more and more, the output is politically analyzed or measured in terms of economic productivity.

At the same time, the evolution of the power structure inside the system, with the increasing participation of internal groups in academic governance and the consequent power dispersion, can affect the relations between internal and external forces, undermine institutional autonomy, and create a strong impetus for governmental and political interference. After all, since the output is measured

politically, the strength and unity of the academic community becomes a myth.

It is interesting to analyze this problem in Brazil. The strong external forces are, primarily, the federal government and, secondly, the state government. Unfortunately, the internal forces are divided and the university as a social body is not united, with university groups fighting over whether to keep or change their present power structure.

The unified "common cause" of academic values within the university is diluted. Then, what are the results of the reforms in Brazil?

Time is necessary to assess the consequences. Day-by-day criticisms can be a useful source of innovation, showing the weaknesses needing correction if common sense is to prevail.

Darcy Ribeiro, a Minister before the 1964 revolution, says that today "Universities in Brazil serve only the dominant classes and have nothing to do with people." For him, the ones inside the system will come out with nice degrees and they will live well in life. That is all. The university is a machine built to domesticate its components, to teach a few professions, to make minor improvements in the quality of technicians, and to put doctors and lawyers in circulation for the rich. The internal mechanism is, for Darcy Ribeiro, a process similar to "cleaning house," since the internal operations dealing with inter-generational contacts finish with the integration of all into the normal social structure.

Moniz Aragao, Minister soon after 1964, takes a technocratic view. For him, the real university began in Brazil in 1965, with the institutionalization of graduate studies, department organization, and research development. These innovations made it possible for Brazil to enter the Century of Technology without destroying the humanistic tradition. Although recognizing deficiencies in the expansion of higher education, he says that "Brazil is creating a proper scientific community without which independence would have no meaning."

These two contrasting theses about university models could be harmonized inside the university system if it were not for strong external interferences; but such harmony is quite impossible, given the nature of the present political regime. A democratic rule is the only one likely to minimize these contradictions and subsequent social tensions. However, even in democratic countries, the displacement of an internal autocratic power structure by an egalitarian decision-making process has been associated with an erosion of autonomy and has led to more subordination to diverse and artificial forms of state control. The equilibrium is far from being reached.

Let us now analyze some of these concrete problems in Brazilian higher education and compare them with American and European modes. The specific historical and socio-political aspects of national academic structures make it difficult to establish non-controversial systematic categories and to develop a methodical comparative analysis

of these structures. Perceptible advances in the structures of human relations -- such as have occurred in universities born out of social elitism -- require time spans of ten to 25 years to be reasonably absorbed; and drastic modifications, possible through political revolutions, succeed only when intellectual patterns are destroyed.

Modifications resulting from social disaggregation cannot be mere substitutions for bourgeois factions. Probably the two most fruitful examples are the French Revolution and the socialist revolutions in Eastern European countries, both of which, however, were soon overwhelmed by new social groups, installing new arrangements with new intellectual patterns. The subsequent Napoleonic and Communist states developed powerful, centralized bureaucratic systems. In brief, a permanent cultural revolution seems to be incompatible with human nature.

The reform programs of the western world in the '60's are producing new or improved structures, but two to ten years of change do not give indications of outstanding success, and continual and antagonistic political interferences are causing confusion and sectarianism.

As we have stated, the Brazilian system started a major quantitative expansion in the early '60's, and structural reforms developed only after 1966. During the last ten years, higher education, under the impact of expansion and reform, has lived in

a permanent state of crisis. As in many other countries, this evolution was not planned but was imposed on the existing society. Let us analyze certain key aspects of this evolution by following Burton Clark's scheme, which deals with two fundamental aspects: (a) differentiation among institutions -- categories of establishments, their role in the system, social prestige and social mobility; (b) differentiation within institutions -- internal organization, mobility inside each institution, levels of certification and training in correlation with a one or multi-tier configuration.

A. Differentiation among Institutions

To advocate decentralized education control for small countries with populations of around 10 million people or less is questionable. Nor does it make sense in the Western European countries with populations of about 30 to 50 million, traditionally state-oriented, unless there is a devolution of autonomy to regions and/or the state takes the risk of sharing power with private entities. The problem is different in countries with populations over 100 million people. Here decentralization not only is absolutely essential for the functioning and improvement of the system, but it is also identified with people's natural aspirations. We may expect to have growing regional decentralization in socialist countries like Russia and China, or to have developing or intensified private participation in others like Japan; but in Brazil we have

the seeds for both types of decentralization.

The size, the population, the geographic, cultural and demographic diversity, and the regional heterogeneity in terms of wealth demand flexible solutions and mobilization of all efforts in this developing country, if it wants to accelerate its entrance into the service-industrialized era. Contrary evidence notwithstanding, the federal Constitution and the substantial private participation already point in this direction.

We can conclude that Brazil has not developed a single-sector organization under a monopoly of a nationalized university system (Latin-German original mode), nor a multi-type differentiated organization under manifold public funds (Britain). Brazil's higher education consists of a blend of sectors, and this mixture includes, as in the United States, several private sectors together with state-sponsored ones. Brazil, however, also adds its own unique component: the federal sector, which functions as a supra-system. Therefore, in some ways, we find a juxtaposition of European and American educational philosophies without a logical synthesis. In the United States we find 2,800 to 3,000 institutions, corresponding to an extreme differentiation which can be classified into ten categories (Carnegie Commission), the three fundamental ones being: the private or state university, the private or state college (minimum four years), and the two-year community college, all mixed with theological, medical, law and technological schools.

Community and state colleges, controlled by public authorities and exclusively engaged in the transmission of knowledge through the teaching function, operate as basic units helping the universities to deal with the problem of quality. These colleges, while substantially contributing to the solution of the mass-education problem, generally have not played the national prestige game.

The endowment pattern provides the backbone for outstanding private universities. These endowments are applied to capital expenses, especially to physical structures or to permanent chairs of instruction. The high tuition fees paid by the upper class, upper-middle class, and, to a certain degree by scholarship programs, are directed to the operating costs of the institution. It is research, with its expensive modern equipment, that makes the private environment more open to some invasion and control by federal programs or, on a smaller scale, by foundation grants. The high tuition fee naturally also generates social discrimination, although this is somewhat minimized in the state colleges and public universities through more open admissions and reasonable fees, and at some private universities by charitable scholarship grants. Therefore, contrary to the Brazilian case, it is natural that some of the most prestigious institutions in the United States (especially on the East Coast) are private universities. However, prominent public universities are found on the West Coast and in the Midwest, where public higher education is better organized and an interconnection among the state colleges and community colleges makes

the system more comprehensive. Because of their prestige, some private and public universities benefit from administrative and collegiate discretionary power which gives them a reasonable degree of innovative capacity. Social mobility through inter-institutional transfer (around half a million) has been increasing and remains more intense in the public sector. Nonetheless, such is far from abating the tensions arising out of differential access.

As we know, in Brazil the 848 existing institutions correspond to private and public universities, independent professional schools and also special schools. Until now, mass higher education in Brazil has been fairly equally distributed between the private (55%) and the public (45%) sectors, the great part of both sectors being financed by public funds and by tuition payments of the Brazilian middle class. The income from endowments is rare for educational endeavors. The funds for teaching and research in the public sector come naturally from the federal and state treasuries, the most significant of the latter being the contributions of São Paulo, Rio de Janeiro and Paraná. The public sector in Brazil has been following the traditional system of free tuition, but as a result of considerable discussion focused on social justice, this system is gradually changing to a reimbursable scholarship program.

Under this the student pays back the cost of his studies during a period equivalent in length to that during which he received his

degree. For this purpose, the Union and some states are installing National (or State) Educational Development Funds. At the same time, private institutions are able to receive subsidies from the federal or state administration with an obligation of following guidelines concerning standards and priorities of the national policy of education. Thus, they become more and more "quasi-public" institutions. (This policy is also followed in Japan.) It is therefore natural that in Brazil the most prestigious institutions are found in the public sector -- like the Universities of São Paulo, Rio de Janeiro and Minas Gerais -- since independent professional schools never were able to attain a prominent standard, although one or another have tried to borrow ideas from the Grandes Écoles.

A proper balance among mass education, equal opportunities, and the quality of education, has not been achieved in any industrialized country. The situation in Brazil with a near 3% growth in population and soaring enrollments in higher education needs profound innovations to maintain reasonable quality while meeting increased demands, without plaguing the institutions with overload. Most of the public and private independent schools are chiefly devoted to the education of undergraduates.

The inter-sector transfer of students should also be well designed, since it could minimize social discrimination. We must bear in mind, however, that higher education enrollment in Brazil is less than 5% of the 18-24 age group compared to 40% in the

U.S. and 10-20% in many Western European countries. Under these circumstances, Brazilian educational expansion cannot be stopped. Special effort is necessary to maintain the policy of some institutions being more specialized and others more comprehensive. A de facto differentiation will always exist.

Comparisons with Western or Eastern European countries are less helpful in this area, since these countries are strongly centralized and the private sector is non-existent, incipient or of small dimension. The Japanese, with strong private organization, are going through a crisis, since their institutions have subsisted on tuition fees. As in Brazil, they now need more and more governmental financial help if standards are not to decline completely. Quality is a fundamental problem and the solution to this major issue cannot include compromises pleasing to everyone.

Another important feature related to differentiation among institutions derives from the way degrees are awarded.

In Brazil's semi-decentralized structure, degrees are awarded in a similar manner to that of the centralized structure with only one sector: Degrees are state controlled, since national validity is achieved through the recognition of the Federal Council. Although there are second-rate Brazilian diplomas of regional value, they are always hopeful of later being acknowledged by the Ministry. The same pattern flourishes in Europe, with some problems of regionalization like that of the Institutes of Technology in France. In the United States the mode is different, with institutional

degrees of varying social significance being accepted.

The problem is, however, that differentiation among institutions does exist within the Brazilian system, since the value of the degree depends on the prestige of the establishment, independent of the official stamp of institutional equality. The degree given by the first-rate University of São Paulo is not the same as one given by an independent faculty in the North Region. Adding to this distinction it is also true that equalitarian principles expressed in laws encounter diverse barriers of tradition, delicate local social behavior, different financial support. Above all, in Brazilian society, prestige is intimately associated with functions and professions cultivated in the institutions. After all, this is a universal characteristic, similar in both capitalistic and socialistic societies.

Brazilian official policy, like that of some Western European countries, may try to reduce a high degree of vertical ranking among institutions, especially in the public sector. But even when power is centralized, it is quite impossible to block the freedom of all institutions to better themselves. This goal of self-betterment cannot be the genuine aspiration for the great part of the independent schools in Brazil -- running as proprietary institutions and sometimes in a precarious financial state -- or for some local universities.

On the other hand, some public universities in Brazil -- as

with a group of private and public universities in the United States -- are enjoying healthy competition. One result of this competition is preparation of students for specialized occupations. In Brazil this phenomenon gave rise to the National Program of Graduate Studies. It is a program that opens the door for some universities to achieve a balance between teaching and research, and it may eliminate the trend towards developing only specialized training centers in ministries other than the Ministry of Education. Out of the 848 institutions in the Brazilian system, only 50 have graduate studies: 25 federal, ten state and 15 private. Among these are 195 units with Master's programs and 68 with Ph.D. programs. Prestige derives from the accreditation by the Federal Council and also from the National Research Council's nomination as Centers of Excellence.

When we analyze more closely this problem of differentiation, it becomes obvious that to impose conformity in teaching or research in the entire system or in part of it opens the trap of mediocrity. Research schools are merit-oriented by nature, associated with selective access of candidates. These are found in the one-tier system inside faculties or departments and are more evident in the multi-tier system in the separate graduate schools. Obviously, mass education affects more the first than the second. Brazil has adopted a mixture of French and American ideas, with departments simultaneously acting as units of teaching and research, with this last activity planned at the national level.

The tendency towards the American model is clear, the evolution of the first cycle studies becoming a cornerstone for a multi-tier system. But problems remain with the possibilities for generalization of this evolutionary process in a framework of a multi-tier organization. The equilibrium between democratization and quality, and the balance between autonomy and coordination of the system at the service of the people, are challenges for the future.

B. Differentiation within Institutions

Brazilian universities are organized internally in departments, institutes, museums, laboratories, or faculties, along the lines of fields of knowledge and disciplines. All these organizational units employ different internal criteria at the entrance level, in their requirements for lateral movements between fields, and during the course-working stage.

In world higher education systems we may find open institutions associated with open fields or with open and selective fields at the same time. It is now common in Europe for universities to have open enrollments in humanities and social sciences and selected admissions in medicine and experimental sciences. In the United States there are open institutions, such as the community colleges, and selective institutions and those with varying admission requirements (academic and financial) such as state colleges, public universities and private universities. The Brazilian system is

composed of selective institutions with quotas, set for public universities and some private establishments (when associated with regional programs) and filled through the vestibular examination; institutions offering various degrees in selected fields with restrictions dependent on laboratory space, hospital size, professional needs, economic planning. Other selective parameters come naturally as in all systems from curriculum structure and high school preparation.

The numerus clausus concept dominates the system in a way similar to that of the American one, but is more generalized. Lateral movements within institutions are easier in American undergraduate education because it is simple to change majors; in Brazil the first cycle gives some flexibility but only inside each field of knowledge. The minimum curriculum established for various courses causes more rigidity than in the United States but is similar to that of many European countries. Independent Brazilian professional schools, however, cannot institutionalize the lateral movement program in a proper way (unless they associate themselves in federations), since the fields of knowledge offered are very limited in number. A general improvement in this program could help to reduce inevitable social tensions of coming years.

Another curious aspect of this type of differentiation is connected to levels of certification and training inside the institution. As stated before, in a simplified way the American

structure of higher education is based on a multi-tier system, while the European mode is based on a one-tier system. The multi-tier program rests upon a succession of degrees and its best expression is the dependence of entrance into a professional school (medicine, law, agriculture, engineering) on receiving a first degree, a bachelor's of arts or science. The immediate consequence is a strong separation within the university of the undergraduate schools from the graduate and professional schools, of general education from specialization. This structure, associated with a proliferation of solely undergraduate colleges, develops internal screening devices capable of controlling the waves associated with mass education. Successive levels with a series of barriers is the American answer. However, in this evolution there is always the danger of developing second-class diplomas connected to predetermined second-rate students, as is the case with some U.S. community and state colleges.

The European mode of academic organization allows access to professional school immediately after the secondary school. Generally, under this process graduate schools do not exist and research flourishes mostly in the same units as first-tier operations, although an attempt has been made to organize special research centers that would parallel existing units. The formal European system was portrayed as having advantages over the multi-tier system over a period of years. First, it was claimed that great

numbers of subjects given in the American first-tier had already been studied in the last two years of European high schools; second, there was supposedly an economy of time in the preparation of the student, since it was more feasible to concentrate on disciplines and programs connected to a profession; and third, it was theoretically more possible to develop a better correlation between theory and experience within so-called integrated curricula.

However, these arguments lost validity with the fundamental phenomenon of mass education. Brazilians are approaching the American mode with the requirement of the first cycle as a condition for the entrance of the professional courses, with a credit system, and with the implementation of the Master's and Doctor's degrees in new centers of graduate studies. The orientation towards the multi-tier system is also shown by the creation of short-cycle curricula and a corresponding intermediate degree. But a question remains. How is it possible to institutionalize a fair and continuous procedure based on individual merit among the levels in a way which fulfills contemporary goals for equal opportunity?

IV. Educational Prospects for Brazil

The next years of university evolution in Brazil will be fascinating. The number of students is estimated to grow to 1,700,000 by 1979. Faculty expansion has to be planned properly in conjunction with campus expansion programs. The estimate of

professors needed by 1979 is 106,000, which is an increase of 32,000 over those teaching in 1974. Around 25,000 will have to enter graduate programs between now and then. By 1979 the number of total Doctorates expected is 1,400, Master's 16,800 and specialized and upgraded degrees 15,300. (At the same time it is expected that about 1,000 Brazilians will receive degrees abroad.) An ambitious, coordinated plan has been devised to fulfill these necessary goals. Great emphasis is placed on planning for natural and human resources at national and regional levels.

The university in the Brazilian vertical society is at the service of the state, with the industrial evolution needing more and more professional specialization. Student clientele will be more and more heterogeneous and will have more questions concerning the nature of the society being developed. Democratization in higher education will progress and can be measured properly by the percentages of different classes within the system, although the expectation is that it will remain a mirror of the existing social stratification for a long time.

The interests and resources of the universities will reflect the political priorities defined by federal and state governments. The community of scholars will have to deal directly with public authority, which will assert itself on major policy goals, leaving aside only routine decisions. Even the latter will in some aspects be coordinated by the Federal Council and other ministerial bodies.

Finances will be assessed in terms of productivity with significant interferences of the Ministries of Planning and Finance. The "knowledge explosion" will have priority in higher education in Brazil, even if society's utilization of various technological conquests will have to be dealt with.

But the Brazilian students and the academic community are asking the question: What does the future hold? That question, without immediate answer, leads us to the problem of the elites and the construction of a new Brazilian society. The military hegemony has to transmit power to competent and trained civil elites, a process necessary for international credibility and necessary to stop the creation of social vacuums capable of destroying the future of this great country.

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